

SS
Tree Studies.



DISTINGUISHING CHARACTERISTICS

for

DETERMINATION OF AGE CLASSES BY EXTERNAL APPEARANCE

in

WESTERN WHITE PINE TYPE

By

F. I. Rockwell - Forest Assistant.

April 25, 1913.

- - - - -

April 25, 1913.

Determination of Age Classes from External Characteristics in

WESTERN WHITE PINE TYPE

The following descriptions apply to each species when growing in dense stands in typical moist sites on north and east slopes and flats. For other sites and conditions see footnotes.

<u>Age Class</u>	<u>Species</u>	<u>Distinguishing Characteristics</u>
0 - 20	White Pine:	<u>Crown</u> conical and green nearly to ground. Whorls of branches easily counted, showing exact age. <u>Bark</u> smooth, of uniform ashy gray or greenish near base; resin blisters numerous entire length of bole. <u>D.B.H.</u> - 0 to 5" or 6"; average 1" to 3". <u>Height</u> of dominant trees - 20' to 25'.
	West.Larch:	<u>Crown</u> conical, taller than white pine. Lower branches already suppressed where shaded by surrounding crowns. <u>Bark</u> smooth and yellowish in younger trees; in older trees dark red, becoming more or less furrowed near base. <u>D.B.H.</u> - 0 to 6"; average 2" to 3". Height of dominant trees - 20' to 25'.
	Red Cedar :	Small seedlings.
20 - 40	White Pine:	<u>Crown</u> conical. Lower branches becoming suppressed but whorls still easily counted. <u>Bark</u> leaden gray; still smooth, with resin blisters noticeable, except at base of largest trees; becoming more or less mottled with white lichen in dense stands. <u>D.B.H.</u> - 1" to 10"; average 2" to 6". <u>Height</u> of dominant tree stand 50'.

- West.Larch: Crown conical; lower branches suppressed and beginning to clear.
Bark becoming thicker, more furrowed, and quite scaly; color, maroon with lighter red in furrows.
D.B.H. - 1" to 12"; average 2" to 6".
Height of dominant stand - 55' to 60'.
- Red Cedar : Chiefly small seedlings. A few may be from 1" to 3" D.B.H. and up to 30' high.
- 40 - 60 White Pine: Crown conical; lower branches somewhat more suppressed but still easily counted, showing approximate age.
Bark smooth in smaller trees or upper parts with resin blisters still apparent; bases of larger trees becoming checked; white lichen blotches more apparent and larger.
D.B.H. - 2" to 15"; average 3" to 8".
Height up to 100'.
- West.Larch: Crown conical; trunk rapidly clearing itself of branches and practically clear in dense stands.
Bark thick and scaly, somewhat thicker at base. Butts not perceptibly swollen.
D.B.H. - 3" to 16"; average 5" to 10".
- Red Cedar: Chiefly small seedlings, with occasional saplings up to 5" D.B.H.
- 60 - 80 White Pine: Crown conical; lower branches practically suppressed but still largely adhering, so that whorls can be counted to within 6 - 12 feet of ground.
Bark lightly checked on lower part of trees, checks becoming quite deep on butts of larger trees; trees thoroughly splotted with white in close stands; blisters have not yet disappeared on smoother barked trees.
Butts not perceptibly swollen.
D.B.H. - 3" to 18"; average 6" to 10".
- West.Larch: Crown conical; lower branches suppressed and trunk cleared as high as shaded.
Bark becoming thicker and more ridged; considerably thicker at base.
Butts beginning to swell.
D.B.H. - 5" to 18"; average 7" to 12".
- Red Cedar : From seedlings up to 7" D.B.H.

80 - 115 White Pine:

Crown becoming less conical, more rounded; one or more lateral branches near tip beginning to grow larger and longer than others; dead lower branches are largely pinched off during this period, particularly on northerly slopes; on flats and other slopes where stands were open in youth, heavy dead branches may remain much longer.

Bark light gray, still rather smooth or lightly checked, with more decided reddish brown furrows near base. White patches of lichen on trunk very noticeable in densely shaded stands. Resin blisters about disappeared.

Butts not yet showing root swelling except in very largest trees.

D.B.H. - 4" to 26"; average 9" to 16".

Height about 125'.

West.Larch:

Crown conical or elliptical; branches suppressed and trunk well cleared as high as shaded.

Bark thick, scaly, and distinctly ridged; noticeably thicker at base, making butts appear somewhat swollen.

D.B.H. - 6" to 25"; average 10" to 14".

Height - 125 to 130 feet.

Red Cedar :

Of all sizes, from seedlings up to 10" D.B.H.

115 - 150 White Pine:

Crown thrifty and changing from conical to well rounded or square with one or more stout lateral branches. In dense stands or in those with cedar or hemlock understory or on northerly slopes trunks are cleared of branches practically to the base of the crown and by the end of the period limb scars fully healed; in open stands or fully stocked but not crowded stands of pure white pine with little understory dead broken branches are still largely persistent on the stem. (on southerly or westerly slopes or flats).

Bark well checked with typical white pine checks, becoming larger at the base. White splotches on trunk still noticeable in densely shaded stands but disappearing rapidly in open stands.

Butts of larger trees showing some root swelling; accumulation of debris around stump quite noticeable.

D.B.H. - 6" to 36"; average 14" to 25".

Height - about 140 feet average.

West.Larch: Crown conical or elliptical; comparatively short at the top of long clean bole.

Bark very scaly, thick, and deeply fissured. These conditions much exaggerated at base of trees, making the butts decidedly swollen. In more open stands bark beginning to scale off from upper part of stem.

D.B.H. - 10" to 30"; average 15" to 20".

Height - average 150 feet.

Red Cedar : Crown thrifty and conical. Stems of merchantable pole size.

D.B.H. - 3" to 26".

150 - 200 White Pine: Crown: top of crown well rounded or square, giving it appearance of cylinder. One or more strong lateral branches quite prominent. Healthy appearance still retained; trunks well cleared except in open stands.

Bark losing its mottled appearance and becoming lighter gray in color; furrows becoming more regular and deeper.

Butts enlarging and showing considerable root swelling with a noticeable accumulation of debris at base of tree.

D.B.H. - 8" to 40"; average 20" to 30"

West.Larch: Crown becoming quite cylindrical and rounded above. No spike tops.

Bark: scales falling off but trunk not yet smooth; extremely thick at base, making the buttresses more noticeable than in 140 year age class. Accumulation of debris at base of tree noticeable.

Red Cedar: Crown conical or becoming rounded above. Appearance still healthy. Boles of larger trees too large for poles; smaller trees suitable.

D.B.H. - 6" to 36".

200 +

White Pine: Crown irregular in appearance; more or less divided at the top; often stag headed. Some very long large branches irregularly placed in narrow columnar crown; smaller branches often suppressed and pinched off in spots so that whorls are no longer noticeable.

Bark uniform light leaden gray not mottled with white patches.

Butts considerably buttressed with root swellings noticeable at base; large accumulation of debris.

D.B.H. - 15" to 50"; average 24" to 45".

West.Larch: Crown narrow with irregular columnar shape; many of branches suppressed and pinched off; numerous small adventitious branches often occur in bunches where original branches were broken off; often spiketopped.

Bark quite smooth, scales having largely dropped off, thus forming a mound at the base of the tree. Bark much thinner than in younger trees except at base where the very thick bark still persists, giving appearance of huge buttresses extending up from ground 3 to 8 feet.

D.B.H. - 20" to 45"; average 25" to 40".

Red Cedar : Crown rounded, becoming spike topped as the tree reaches greater age. Trunk too large for poles. Heavily buttressed by root swellings. Tree often hollow, becoming more so with age.

Note: Above descriptions apply to best site conditions - deep moist soiled northerly slopes and flats. For poorer site qualities of same aspects (thin or gravelly soils), or for overstocked stands, the description of the next younger age class will apply to the appearance of upper crown and bark and to the size. The lower branches, however, will be even more suppressed, and trunk better cleared than is indicated for the same age class.

For open white pine stands, without cedar or hemlock understory, such as are sometimes found on ridges, south or west slopes, or flats, and especially where the stand was not well stocked during youth, the lateral branches of the white pine may have developed to such a size that they will never pinch off, even at great age. Under such conditions, too, the white lichen blotches do not appear on the tree trunks, but the color of the bark changes gradually from a dark to a light leaden gray as the tree grows older. It is also much thicker and more deeply ridged in open stands than in dense stands.

D. J. Rockwell

Forest Assistant